# HF Happenings

You can now download your copy of HF Happenings from www.sarl.org.za/hf_happenings.asp.

## Results of the ZS4 Sprint

The Sasolburg committee are happy to present the results for the ZS4 Sprint held on 24 April 2016. Thirteen logs and one check log was received. The club will send the certificates via e-mail to the winners. As special certificate will be sent to ZT4T (operated by Jan, ZS4JAN) to acknowledge the achievement of his log.

1st Max Rossi, ZS5MAX – 78 points
2nd Johan van Vuuren, ZS2JV – 67 points
3rd Johan van Zijl, ZS4DZ - 58 points
4th Port Elizabeth ARS, ZS2PE – 49 points
5th Bradley Glen, ZS5BG – 45 points
6th Pravin Kumar, ZS5LT – 44 points
7th Bloemfontein ARC, ZS4BFN – 40 points
8th Sasolburg ARC, ZS4SRK – 19 points
9th Tienie Herbst, ZS6MHH - 16 points
10th Hentie Lombaard, ZS1LH – 15 points
11th Stephan van Jaarsveldt, ZS6SVJ – 10 points
12th Nic van Duffelen, ZR6AEZ, and Eddie Leighton, ZS6BNE - 8 points each

Check log ZS4T (operated by Jan, ZS4JAN) – 142 points

## Highway Amateur Radio Club 20

Max, ZS5MAX, says, "We are happy to inform that on 18 June 2016 the Highway Amateur Radio Club will be 20 years old. We will be holding a special event at the New Germany Sports Club to mark this special day. We will be running a special event station under the club's call sign ZS5HAM and will be looking forward to making as many contacts with fellow Amateurs on the day.

## DXCC News

5A1AL (Libya, all operations) has been approved for DXCC credit. If you have had this rejected in a prior application, you can send a note to dxccadmin@arrl.org to be placed on the list for an update to your record. Please note the submission date and/or reference number where the rejection was noted to expedite recovery of the information.

## Operating Standards Booklet

Over the last eight years, the booklet "Ethics and Operating Procedures for the Radio Amateur" (www.hamradio-operating-ethics.org) has become a respected work describing the best standards of operating on the amateur bands. Translated into most major languages (but not Afrikaans), the booklet by John Devoldere, ON4UN, and Mark Demeuleneere, ON4WW, is a valuable reference work for all radio amateurs.
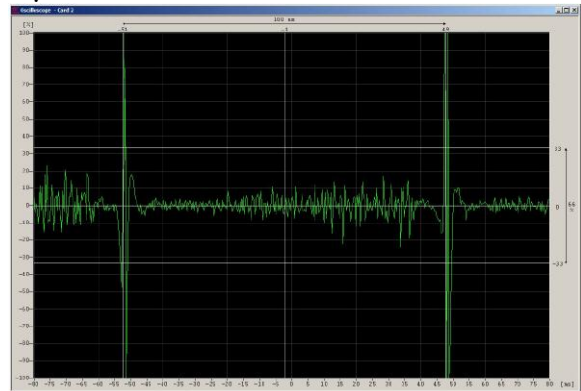
Mark and John recently contacted IARU, explaining that they felt it appropriate for the IARU to become the custodian of the booklet into the future. The IARU Administrative Council accepted this offer with gratitude and on 5 May, Mark and John met Don Beattie, G3BJ, President IARU Region 1, in Brussels to officially hand over the document. IARU will now carry forward the work in future years to ensure its continuing relevance and currency.

## OTH Radars, Fishery and Taxi Traffic, Buoys and Broadcasters continue to mar Amateur Bands

The International Amateur Radio Union Region 1 Monitoring System (IARUMS) April newsletter chronicles a plethora of intruding signals heard on exclusive Amateur Radio allocations in Europe and Africa, many of these also affecting the bands in IARU Regions 1 and 3. The most significant interfering signals originate from over-the-horizon (OTH) radars in China and Russia and affect 40, 30, 20 and 15 metres.



The newsletter also recounts monitoring stations' reports of voice traffic on several bands from fishing operations in various parts of the world, telemetry from marine buoys, and persistent taxi dispatching traffic from Russia on 10 metres. Other interference has stemmed from broadcasters - harmonic-challenged and otherwise - as well as from jamming signals attempting to prevent broadcasts from reaching their intended audiences. Pirate (i.e., unlicensed) stations have been reported on 80 metres and elsewhere and Russian digital military traffic has been monitored on 40 and 20 metres.

OTH radar interference prevails, however. IARUMS Region 1 Coordinator Wolf Hadel, DK2OM, documented Chinese OTH radar occupying considerable swaths of spectrum on several bands.

IARU Region 1 maintains the world's most active network of volunteer intruder monitors.

## European amateurs announce NEW RADIO – a dual-band, multi-mode radio to support DMR, D-STAR and C4FM

On 8 May, an article appeared in the ÖeVSV by Kurt, OE1KBC, about a new dual-band, multi-mode mobile radio called the '**NEW RADIO**' that will operate on the 2 m and 70 cm bands and support the most common ham digital modes, including DMR, D-STAR and C4FM (System Fusion), plus analogue FM.

As reported in the article, the NEW RADIO has been created by hams for the ham radio community will feature a colour touch screen display, 50 W of power output, a 1,8 GHz processor, a Linux operating system, plus dual AMBE+ vocoders, allowing for full-duplex, cross-band operation.

In addition, one of the biggest features of the NEW RADIO is that it will include a built-in LTE wireless modem and SIM card allowing it to be Internet connected while on the go. Apparently, with it being Internet connected, the NEW RADIO will be able to automatically download frequencies, offsets, contacts and other configuration information on the go, allowing for instant updates for users. This will undoubtedly be a much-welcomed feature for anyone used to loading code plugs into radios, as is the case with DMR.

In addition to the mobile version, NEW RADIO is also working on a portable and base station model that features similar operating specifications using different form factors. Read more at the VA3XPR website www.va3xpr.net/newradio-dual-band-multi-mode-radio/

## Ocean Floater - ZL1SIX

The radio amateurs down under are about to launch a marine buoy into the South Pacific Ocean. The payload contains a low power JT9 beacon transmitting in the 30 m band. The beacon is already underway to the launch site and the beacon is already alive. Tracking the progress should be most interesting; we might learn a few things about sea currents and propagation. www.qsl.net/zl1rs/oceanfloater.html

## Pirate Alert

Prasad, VU2PTT, reports, "Recent CW operations spotted on the cluster indicate the call of old-timer Ganesh, VU2TS, is being pirated. Spots show Ganesh being heard and worked in EU and USA around 04:00 -05:00 UTC - that is a period of time when there is absolutely no propagation on any band to USA. I spoke with Ganesh yesterday on the phone and he mentioned he is aware of the situation now. He is mostly active on JT65 and PSK these days."

## African DX

Africa DX Net - every Saturday afternoon from 14:00 UTC on 14,260 MHz hosted by Mike, V51MA, Leon, A25SL, and Tinus, ZS6MHK.

Mali, TZ. Laurent, F5IXR has been active as TZ5XR from Kidal, Mali since 12 May and will remain there until 2 June. He operates CW on the HF bands. QSL via F5MXH and LoTW.

## African Islands

IOTA frequencies
CW: 28 040 24 920 21 040 18 098 14 040 10 114 7 030 3 530 kHz
SSB: 28 560 28 460 24 950 21 260 18 128 14 260 7 055 3 760 kHz

Comoros, D6. Petr, OK1BOA, Pavel, OK1GK, Pavel, OK1FPS, Rudolf, OK2ZA and David, OK6DJ will be active as D66D from Comoros Islands (AF-007) during the second half of September. Activity will be on 160 to 10 metres using CW, SSB and RTTY. QSL via OK6DJ, ClubLog's OQRS (direct, by the Bureau, LoTW) and eQSL. For more details and updates, see http://www.cdxp.cz

Guinea-Bissau, J5. Alfeo, I1HJT, Silvano, I2YSB, Vinicio, IK2CIO, Angelo, IK2CKR, Marcello, IK2DIA, Stefano, IK2HKT, and Mac, JA3USA will be active from Bijagos Archipelago (Bissagos Islands) IOTA group AF-020, Guinea Bissau, sometime mid-November. Call sign(s) has not been announced yet. Activity will be on 160 to 6 metres using CW, SSB and RTTY. Suggested frequencies are:

CW – 1 826, 3 530, 7 025, 10 115, 14 030, 18 068, 21 030, 24 890 and 28 030 kHz
SSB – 3 750, 7 090, 14 260, 18 155, 21 310, 24 970 and 28 480 kHz
RTTY – 21 083 kHz
6 m – 50 102 CW and 50 123 SSB

QSL via I2YSB direct only. QSLs for direct, LoTW and by the Bureau will be available via the OQRS on their Web page. Logs will be posted to LoTW about 6 months after the conclusion of the DXpedition. Look for more details, updates and a "Needs Survey" at http://www.i2ysb.com/idt/index.php?option=com_content&view=featured&Itemid=101

## CQ WPX CW Contest

During the weekend of 28 and 29 May, the major contest will be the CQ WPX CW http://www.cqwpx.com/. As prefixes are the multiplier, newly assigned calls can be an advantage. As always, it is good to review the rules before the contest, and remember that this contest also has overlay categories http://www.cqwpx.com/rules_2016.pdf.

## Word to the Wise

UBN - usually used in the context of "UBN Report," it stands for **U**nique, **B**ad, **N**ot-in-log, the categories into which contacts are sorted during the log scoring process when they cannot be confirmed by other logs. For example, if WX7XX is in my log, but nobody else in the contest worked WX7XX (and WX7XX doesn't submit a log for scoring), that contact will be classified as "Unique." "Bad" contacts are mistakes made in making the contact, including miscopied calls or exchanges. "NILs" are contacts reported in your log, but the station you (believe) you have worked does not have your contact in their log. How the contacts in these categories affect your score depends on the rules for that particular contest.

## Operating Tip

Encourage search-and-pounce operators to call you more quickly by including a *trailing* CQ in your RTTY CQ message. If an operator is tuning up or down the band, and they encounter your CQ message, they will know they can call you if they copy your call and 'CQ'. For example, if my CQ message is "CQ BARTG N9ADG N9ADG CQ," an operator tuning the band and landing on my frequency between my two call signs will know they can call me immediately. Without the trailing CQ, they would copy just my call sign; not knowing would have to wait for my next CQ. If I take too long to send the CQ message or if the S&Per is impatient, they might just move along. Adding CQ to your 'thank you' message may achieve a similar effect.

## Remote Desktop and Control Software

TeamViewer, http://www.teamviewer.com/ the remote desktop and control software, has found wide applicability in a number of amateur applications for remote control, monitoring, and plain convenience. It is free for personal, non-commercial use.

Mark, K6UFO, points out that TeamViewer Host is now available for the Raspberry Pi https://www.teamviewer.com/raspberrypi/. "This should have some great uses for control across the internet of individual equipment, special projects, stations, etc." After installing TeamViewer host on a Raspberry Pi 2 or Raspberry Pi 3, that device can be controlled by any other device running TeamViewer.

## Contest Calendar

This week's contests as compiled by Bruce Horn, WA7BNM. The period covered is 16 to 23 May 2016

Run for the Bacon QRP Contest
01:00 - 03:00 UTC 16 May
Mode: CW
Bands: 160, 80, 40, 20, 15, 10 m
Classes: Single Band; All Band
Max power: 5 watts
Exchange: RST, state, province or country and member no or power
Work stations: Once per band
QSO Points: 1 point per QSO with non-member; 3 points per QSO with member on same continent; 5 points per QSO with member on different continent
Multipliers: Each state, province or country once; Multiply mults by 2 if >50 members worked
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 22 May 2016
E-mail logs to: (none)
Upload log at:
http://qrpcontest.com/pigrun/autolog.php
Mail logs to: (none)
Find rules at: http://qrpcontest.com/pigrun/

Phone Fray
02:30 - 03:00 UTC 18 May
Mode: SSB
Bands: 160, 80, 40, 20, 15 m
Classes: Single Op
Max power: 100 watts
Exchange: NA: Name and state, province or country; non-NA: Name
Work stations: Once per band
QSO Points: NA station: 1 point per QSO; non-NA station: 1 point per QSO with an NA station
Multipliers: Each US state (including KH6/KL7) once per band; Each VE province/territory once per band; Each North American country (except W/VE) once per band
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 03:00 UTC 20 May 2016
E-mail logs to: (none)
Post log summary at:
http://www.3830scores.com
Mail logs to: (none)

Find rules at:
http://www.perluma.com/Phone_Fray_Contest_Rules.pdf

CWops Mini-CWT Test
13:00 - 14:00 UTC and 19:00 - 20:00 UTC 18 May and 03:00 - 04:00 UTC 19 May
Mode: CW
Bands: 160, 80, 40, 20, 15, 10 m
Classes: Single Op – QRP, low or high
Max power: HP: >100 watts; LP: 100 watts; QRP: 5 watts
Exchange: Member: Name and member no; non-Member: Name and state, province or country
Work stations: Once per band
QSO Points: 1 point per QSO
Multipliers: Each call once
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 04:00 UTC 21 May 2016
Post log summary at:
http://www.3830scores.com
Mail logs to: (none)
Find rules at:
http://www.cwops.org/cwt.html

RSGB 80 m Club Championship, CW
19:00 - 20:30 UTC 19 May
Mode: CW
Bands: 80 m Only
Classes: (none)
Exchange: RST and serial no
QSO Points: 1 point per QSO
Multipliers: (none)
Score Calculation: (see rules)
Submit logs by: 23:59 UTC 26 May 2016
Upload log at: http://www.rsgbcc.org/cgi-bin/hfenter.pl
Mail logs to: (none)
Find rules at:
http://www.rsgbcc.org/hf/rules/2016/r80mcc.shtml

NCCC RTTY Sprint
01:45 - 02:15 UTC 20 May
Mode: RTTY
Bands: (see rules)
Classes: (none)
Exchange: Serial no, name and QTH

Score Calculation: Total score = total QSO points x total mults
Submit logs by: 22 May 2016
E-mail logs to: (none)
Post log summary at:
http://www.3830scores.com/
Mail logs to: (none)
Find rules at:
http://www.ncccsprint.com/rttyns.html

NCCC Sprint
02:30 - 03:00 UTC 20 May
Mode: CW
Bands: (see rules)
Classes: (none)
Exchange: Serial no, name and QTH
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 22 May 2016
E-mail logs to: (none)
Post log summary at:
http://www.3830scores.com/
Mail logs to: (none)
Find rules at:
http://www.ncccsprint.com/rules.html

Slobozhansky Sprint Contest
18:00 - 19:59 UTC (SSB) and 20:00 - 21:59 UTC 20 May (CW)
Mode: CW, SSB
Bands: 160, 80 m
Classes: Single-Op Multi-Band – CW, SSB or both; Single-Op Single-Band; Multi-Single
Exchange: Serial no and Administrative District (URDA, RDA, province or state)
Work stations: Once per band per 15-minute period (see rules)
QSO Points: 1 point per QSO
Multipliers: Each administrative district once per band
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 10 June 2016
E-mail logs to: ut0lwr@ukr.net
Mail logs to: (none)
Find rules at:
http://tdr.at.ua/index/rules2015/0-13

UN DX Contest
06:00 - 21:00 UTC 21 May

Mode: CW, SSB
Bands: 80, 40, 20, 15, 10 m
Classes: Single Op - CW, SSB or mixed - low or high; Single Op Single Band; Multi-Op Single Transmitter; SWL
Max power: HP: >100 watts; LP: 100 watts
Exchange: Kazakhstan: RS(T) and District Code; non-Kazakhstan: RS(T) and QSO no
Work stations: Once per band per mode
QSO Points: 2 points per QSO with same country; 3 points per QSO with different country, same continent; 5 points per QSO with different continent; non-Kazakhstan: 10 points per QSO with Kazakhstan station
Multipliers: Each KDA district once per band; Each DXCC country once per band
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 5 June 2016
E-mail logs to: log@undxc.kz
Mail logs to: (none)
Find rules at: http://undxc.kz/bez-rubriki/2015-2/

NZART Sangster Shield Contest
08:00 - 11:00 UTC 21 May and 08:00 - 11:00 UTC 22 May
Mode: CW
Bands: 80 m Only
Classes: Single Op
Max power: non-ZL: >5 watts; ZL: 5 watts
Exchange: ZL: RST, serial no and Branch no; non-ZL: RST and serial no
Work stations: Once per half hour
QSO Points: (see rules)
Multipliers: ZL branches once
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 18 June 2016
E-mail logs to: sangster@nzart.org.nz
Mail logs to: Contest Manager, Glenn Kingston, ZL2KZ, 53 Tannadyce Street, Wellington 6003, New Zealand
Find rules at:
http://www.nzart.org.nz/activities/contest-rules/rules-sangster-shield/

Aegean RTTY Contest
12:00 UTC 21 May to 12:00 UTC 22 May
Mode: RTTY

Bands: 80, 40, 20, 15, 10 m
Classes: Single Op; Multi-Op
Exchange: RST and QSO no
Work stations: Once per band
QSO Points: (see rules)
Multipliers: (none)
Score Calculation: Total score = total QSO points
Submit logs by: 15 June 2016
E-mail logs to: sv8cyr@gmail.com
Mail logs to: Aegean RTTY Contest, PO Box 04, 83100 Samos Hellas, Greece
Find rules at:
http://aegeandxgroup.gr/AEGEAN-RTTY-CONTEST.php

EU PSK DX Contest
12:00 UTC 21 May to 12:00 UTC 22 May
Mode: BPSK63
Bands: 80, 40, 20, 15, 10 m
Classes: Single Op All Band - 24 h or 12 h - high or low; Single Op Low Bands - high or low; Single Op High Bands - high or low; Single Op Single Band - high or low; Multi-Single - YM or OM; Multi-Multi - YM or OM
Max power: HP: 100 watts; LP: 10 watts
Exchange: EU: RST and EU area code; non-EU: RST and QSO no
QSO Points: 1 point per QSO with same country; 2 points per QSO with different country, same continent; 3 points per QSO with different continent; non-EU Stations: 5 points per QSO with EU
Multipliers: Each DXCC country once per band; Each EU area code once per band
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 27 May 2016
Upload log at:
http://ua9qcq.com/en/submit_log.php?lang=en
Mail logs to: (none)
Find rules at:
http://www.eupsk.com/eupskdx/eupskdxrules.pdf

His Majesty the King of Spain CW Contest
12:00 UTC 21 May to 12:00 UTC 22 May
Mode: CW
Bands: 160, 80, 40, 20, 15, 10 m

Classes: Single Op All Band - QRP, low or high; Single Op Single Band; Multi-Op
Max power: HP: >100 watts; LP: 100 watts; QRP: 5 watts
Exchange: EA: RST and province; non-EA: RST and serial no
Work stations: Once per band
QSO Points: (see rules)
Multipliers: Each EA province once per band; Each EADX100 entity once per band; Each special (EA0) station once per band
Score Calculation: Total score = total QSO points x total mults
Submit logs by: 6 June 2016
E-mail logs to: (none)
Upload log at:
http://concursos.ure.es/en/logs/
Mail logs to: (none)
Find rules at: http://concursos.ure.es/en/s-m-el-rey-de-espana-cw/bases/

Feld Hell Sprint
16:00 – 17:59 UTC and 20:00 - 21:59 UTC 21 May
Mode: Feld Hell
Bands: 160, 80, 40, 20, 15, 10, 6 m
Classes: (none)
Max power: Standard: 100 watts; QRP: 5 watts
Exchange: (see rules)
Work stations: Once per band
QSO Points: (see rules)
Bonus Points: (see rules)
Multipliers: (see rules)
Score Calculation: (see rules)
Submit logs by: 25 May 2016
Upload log at:
https://sites.google.com/site/feldhellclub/
Mail logs to: (none)
Find rules at:
https://sites.google.com/site/feldhellclub/Home/contests/sprints/hamvention-sprint

Baltic Contest
21:00 UTC 21 May to 02:00 UTC 22 May
Mode: CW, SSB
Bands: 80 m Only
Classes: Single Op CW/SSB; Single Op 2 Hrs CW/SSB; Single Op CW; Single Op SSB; Multi-Single; SWL

Exchange: RS(T) and serial no
Work stations: Once per mode
QSO Points: ES/YL/LY Stations: 1 point per QSO with EU; ES/YL/LY Stations: 2 points per QSO with non-EU; EU Stations: 10 points per QSO with ES/YL/LY; EU Stations: 1 point per QSO with non-EU; non-EU Stations: 20 points per QSO with ES/YL/LY; non-EU Stations: 1 point per QSO with non-ES/YL/LY

Multipliers: (none)
Score Calculation: Total score = total QSO points
Submit logs by: 10 June 2016
E-mail logs to: lrsf@lrsf.lt
Mail logs to: Baltic Contest, PO Box 210, LT-44003 Kaunas, Lithuania
Find rules at:
http://www.lrsf.lt/bcontest/english/rules_html.htm

## Next Week's Contests

SKCC Sprint, 00:00 - 02:00 UTC 25 May
Phone Fray, 02:30 - 03:00 UTC 25 May
CWops Mini-CWT Test, 13:00 - 14:00 UTC and 19:00 - 20:00 UTC 25 May and 03:00 - 04:00 UTC 26 May
NCCC RTTY Sprint, 01:45 - 02:15 UTC 27 May
NCCC Sprint, 02:30 - 03:00 UTC 27 May
CQ WW WPX CW Contest, 00:00 UTC 28 May to 23:59 UTC 29 May
Portuguese Navy Day Digital Contest, 08:00 - 23:59 UTC 28 May
SARL Digital Contest 13:00 - 16:00 UTC 29 May

# VHF Happenings

## Elementary School's SSTV CubeSat Now Set to Deploy from ISS on 16 May

After postponements earlier this year, the STMSat-1 CubeSat constructed by pupils at St Thomas More (STM) Cathedral School in Arlington, Virginia, now is set to deploy from the International Space Station on Monday 16 May between 14:00 and 15:00 UTC. The spacecraft is equipped with a slow-scan TV (SSTV) payload that will transmit on the 70 centimetre Amateur Radio band (437,800 MHz).

The school won a NASA competition for the launch. The satellite is the first to be designed and built by grade schoolers, who have been supported by NASA technical advisors and local radio amateurs. Transported to the ISS in December by an Orbital ATK Cygnus spacecraft, the kit-built satellite first had been scheduled for release in mid-February, but that event was postponed until early March, before being put on hold again.

"The STM Sat-1 mission is to perform Earth observation and engage grade-school students around the world as remote Mission Operation Centres," the STMSat-1 website explains. The satellite project is part of the school's STEM (Science, Technology, Engineering, Mathematics) education initiatives. St Thomas More includes students from pre-kindergarten through grade 8. The project aims to engage other schools around the world as "Remote Mission Operation Centres" (http://www.stmsat-1.org/rmoc/).

NASA's Technology Demonstration Office provided the school with a mobile "clean room" to ensure that the construction phase met with strict guidelines and standards for launch and deployment from the ISS. The space agency also provided the school with an antenna, so the school can receive the SSTV images and temperature readings the satellite sends back. The students already have tested their CubeSat by sending it aloft on a tethered balloon.

The SSTV camera on-board STMSat-1 will transmit a Martin-2 image every 30 seconds. It will not transmit a beacon signal, however. The youngsters are hoping it will send back images of Earth as seen from space. The transmitter runs 3 W and there is no on-board data storage capability.

STMSat-1 has an estimated lifetime of at least 9 months.

## Was Gagarin a Radio Amateur?

A new amateur radio promotional leaflet produced by the Dutch national society VERON perpetuates the myth that Yuri Gagarin was a radio amateur. VERON has made the leaflet available in a convenient PDF format to enable amateurs to print it out to give away at fairs, open days, or just to friends, family or neighbours. As well as providing a good explanation of the hobby, the leaflet lists some famous radio amateurs; one of those they quote is Yuri Gagarin, UA1LO.

This myth appears to have arisen from an article by Joe Kasser, G3ZCZ, in the March/April 1981 issue of the AMSAT Orbit magazine. In it, he says that Yuri Gagarin, the first person to fly in space, was UA1LO. Joe based that assertion on the fact that W8DX had received a QSL card for a contact that took place on 19 May 1962 from a Russian radio amateur UA1LO whose name just happened to be "Yuri".

The QSL card contained a picture of Yuri Gagarin, but it was not unknown for Russian amateurs of the time to celebrate the historic achievement in this way. The spaceflight had taken place just over a year earlier and was a source of immense pride to many Russians.

Given that the last name of UA1LO was not given on the card, and Yuri is anyway a common name in Russia, the connection appears tenuous. To date, no one has provided any evidence that Yuri Gagarin ever held an amateur licence.

Download the VERON amateur radio leaflet at
www.veron.nl/wp-content/uploads/2014/01/Zendamateur-radioamateur-of-radiozendamateur.pdf

2002 AMSAT Bulletin Board explanation of the confusion about UA1LO
www.amsat.org/amsat/archive/amsat-bb/200209/msg00249.html

A list of more than 100 Astronauts and Cosmonauts who have held amateur radio licenses is at www.ariss.org/hams-in-space.html

## An Australian built satellite project

In many countries, the challenge of space exploration continues, and here in West Australia is what could be the start of a new satellite project. This can have a place in the era of innovation and the emerging STEM activities at schools. The OzQube-1 project is a tiny PocketQube satellite that is being built in a back shed and has been on ABC radio and television, even its own website and Facebook page.

Building OzQube-1 is a challenge for its builder, Stewart McAndrew, but preparing for a low earth orbit by piggybacking with others on a space launch, costs money. In his childhood, he had an interest in finding out how things worked, built electronics kits, studied aviation and settled into a career in Information Technology. To make the OzQube-1 dream closer to reality, crowd funding through a GoFundMe campaign is underway. More details on OzQube-1 project are via the URLs below

SatMag article - http://www.satmagazine.com/story.php?number=1481898241
Phys.Org article - http://phys.org/news/2015-06-diy-satellite-backyard-orbit.html
OzQube-1 blogspot: ozqube-1 http://ozqube-1.blogspot.com.au/
Facebook - https://www.facebook.com/ozqube1

## 60 years of 4 metres

A special event station, GB4MTR, celebrating 4 m (70 MHz) band will be operational from 1 to 28 November 2016. The event is being organised by Harlow and District Amateur Radio Society in Essex, UK. Station will operate on 80 metres right down to 70 cm.

## NASA'S Giant Space Balloon

On 17 May, NASA successfully launched a gigantic helium balloon from Wanaka, New Zealand, on a 100+-day mission to the stratosphere. The 19 million cubic foot behemoth is now floating over southern Australia, and it will soon proceed to circumnavigate the southern hemisphere. Sky watchers near the flight path can see the "space balloon" with the unaided eye and track it with backyard telescopes. Visit http://spaceweather.com for observing tips and more information about the balloon's fascinating payload.

Items used with acknowledgement to the ARRL Letter, the ARRL DX News, the ARRL Contest Update, OPDX Bulletin, 425 DX Bulletin, DXNL Newsletter, WIA-News, the RSGB News, DxCoffee, Southgate ARC News, DX World and the Amateur Radio Newsletter